**Difference between JPA, Hibernate, and Spring Data JPA**

| **Feature** | **JPA (Java Persistence API)** | **Hibernate** | **Spring Data JPA** |
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| **Type** | Specification/Standard | Implementation of JPA | Framework on top of JPA and Hibernate |
| **Provided By** | Java (Jakarta EE / Java EE) | Red Hat (Open Source ORM) | Spring Framework |
| **Purpose** | Defines **how** to manage relational data | Provides actual code for JPA spec | Simplifies and automates JPA repository code |
| **Code Writing** | You write all queries and entity management | You write code but get extra features | Auto-generates boilerplate CRUD, paging, etc. |
| **Annotation Example** | @Entity, @Id, @OneToMany | Same as JPA (uses them) | Same JPA annotations + repository interfaces |
| **Main Interface** | EntityManager | Session (extends JPA features) | JpaRepository, CrudRepository |
| **Use Case** | When you want a standard, vendor-neutral ORM | When you want more power/control | When you want rapid development & less code |